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AUTHOR	Mauranen, Anna
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ABSTRACT

Academic rhetoric is manifested at all levels of language, and its aim is to increase the credibility of the writer's message in the reader's mind. However, cultural variation in rhetorical values and conventions may undermine the writer's efforts to impress the reader. The use of reference in scientific texts by Finnish and native English writers was studied as a reflection of underlying rhetorical strategies. Both similarities and differences between the two groups of writers were found in the use of certain reference items as well as in making references to central referents in the text. Writers with different cultural backgrounds thus produced different rhetorical effects through their use of reference and exhibited different rhetorical strategies. (Author)

Reference in academic rhetoric. A contrastive study of Finnish and English writing.

ANNA MAURANEN

Abstract

Academic rhetoric is manifested at all levels of language and its aim is to increase the credibility of the writer's message in the reader's mind. However, cultural variation in rhetorical values and conventions may undermine the writer's efforts to impress the reader. The use of reference in scientific texts by Finnish and native English writers was studied as a reflection of underlying rhetorical strategies. Both similarities and differences between the two groups of writers were found in the use of certain reference items as well as in making reference to central referents in the text. Writers with different cultural backgrounds thus produced different rhetorical effects through their use of reference and exhibited different rhetorical strategies.

1. Introduction

Reference is a widely used concept in several disciplines, with different definitions even within the field of linguistics. In this study, a referent is defined as that which can be talked about, and referring means pointing to such entities through language. If we limit the scope of reference to its operation in text, there are two basic ways of looking at it: either starting from the class of items in a language that are used specifically for pointing outside themselves, thereby creating cohesion in text (Halliday and Hasan, 1976), or starting from the entities to which reference is made throughout a text and which form chains in the text (e.g. Källgren, 1979).

It is well known that foreign students have difficulties with some elements of the English reference system, such as article use. However, explanations and remedies of these difficulties have not lead to great successes. One reason for this failure may be the study of article usage in isolation from its wider textual contexts. The contextualized study of non-native speakers' article use as part of the English reference system is only beginning to be applied to Finnish writers (cf. Ventola and Mauranen, 1990, Ventola, in this volume). In addition to this, other aspects of how native and non-native speakers employ reference need to be explored. In particular, it will be of interest to see whether reference is used differently by speakers of different mother tongues and cultural backgrounds even when no overt grammatical errors can be pointed out, and if this is the case, what consequences it has for the rhetorical

effects of texts. Moreover, patterns of reference use can in their turn throw light on more general underlying rhetorical strategies that are used by writers from different cultures.

This paper will not address itself primarily to the apparent difficulties that non-native, in this case Finnish writers have in employing the system of reference, but rather focus attention on the different rhetorical choices or preferences that Finns have as compared to native speakers of English. The paper is part of a larger study investigating the textual differences in academic journal articles written by Finnish writers and native speakers of English (see Mauranen, 1990; Ventola and Mauranen, 1990; forthcoming).

Differences in the use of reference in texts by Finnish and English-speaking writers will be discussed in terms of the employment of some reference items as well as in the use of repeated references to key entities in text. It will be suggested that some of the differences reflect different textual strategies that are characteristic of the writer's native culture.

2. Reference and rhetoric

The main focus of this paper is on rhetoric, and how it operates through reference. Rhetoric is taken to consist of all the choices that the writers of academic papers make in their writing in order to produce an effect on their readership. Rhetoric in this sense can be seen as perlocutionary action (cf. Austin, 1962; Mason, 1989), which manifests itself through all levels of writing, and at all levels of language.

Although the particular rhetorical effects that individual writers seek to achieve by their choices in writing are not accessible to the text analyst, a more general assumption can be used to provide a background for the analysis of texts: the overall rhetorical effect that academic papers are trying to achieve is that of high credibility. Most academic articles are trying to convince their readers of the factual status of the results presented, or then to persuade readers of the validity of the argument put forth, or, in many cases, both of these things. This can be assumed to constitute a goal that is common to academic papers in general, deriving from the nature of communication in the academic discourse community. It is also worth noting in this context that most scientific writing is not primarily concerned with producing the impression of a good text, but the impression of a good study.

Specific rhetorical features of texts can also be postulated as originating in the common goal of the discourse community. Such features are essentially genre-typical in that they reflect the requirements made on the discourse by the genre of academic research paper writing. Obviously, such features are important in academic writing,

and this has lead some scholars to assume that these common forms constitute the essence of academic writing across cultures and languages (e.g. Widdowson, 1979). However, there is also ample evidence that all writing is strongly anchored in the values of the writing cultures that people get socialized into as they learn to write (for example, Kaplan, 1988). It can therefore be assumed that two sets of values are simultaneously at work in the writing of a scientific report: those common to the academic community and those held in esteem in the writer's national culture. Both sets of values can be expected to leave their traces on texts.

What light can we then hope to throw on academic rhetoric by studying reference? Two things, at least: reference can be used to test hypotheses derived from other approaches to the text, and it can be studied in its own right, to see whether it offe. any insights into the ways in which effects are created.

Reference as a textual phenomenon can be approached in at least two ways. Firstly, the model developed by Halliday and Hasan (1976) starts from a set of reference items, and studies their operation in text, mainly their cohesive properties. This approach limits reference to a closed class of items. Secondly, reference can be seen in terms of tracking referents, or participants (see Martin, 1983) in a text. This notion is similar to that of reference chains, where in addition to the reference items recognized by Halliday and Hasan, lexical means of referring are also included in the formation of chains (see for example Källgren, 1979). Since these two approaches give different perspectives on texts, they will be looked at in turn to see what each can disclose about academic rhetoric.

In the following, two hypotheses relating reference and academic rhetoric are discussed. The first deals with genre-typical vs. culture-typical uses of reference and can perhaps be best studied in the light of referential items, the second is concerned with culture-typical use by Finnish writers, and lends itself to investigation through tracking key referents, or seeing how reference chains operate in texts.

Hypothesis 1: Some reference features in text are genre-typical in academic journal articles and do not show cultural variation. These features are of a kind that are required by the demands of the written academic genre, and include such features as frequent use of endophoric, homophoric, esphoric and inferential references. In addition to these, other features of reference can be found which exhibit variation with respect to cultural preferences.

Hypothesis 2: Finns prefer different patterns of textual organization from English-speaking writers: they place more emphasis on the ends of sections. Therefore Finnish writers are expected to introduce new and important referents later in a text section than do native speakers of English.

Texts from three sources were compared in this study: (1) texts written by Finnish scientists in English, (2) texts written by scientists who are native speakers of English, and (3) texts written by Finnish scientists in Finnish. The texts were all medical papers. The L1 texts had been published in medical journals, and the L2 texts were intended for publication, but had been sent for advance language revision to native speakers of English. The different comparisons were based on different sets of papers, and examples will be drawn from just a few of them, but the detailed study involved 14 articles in all.

2. Reference items

Halliday and Hasan define reference items as those items in a language which "instead of being interpreted semantically in their own right, ... make reference to something else for their interpretation" (Halliday and Hasan 1976: 31). The definition is thus based on the function of these items in the system of language. In English these items are personals (*I, you, it,...*), demonstratives (*this, that, the,...*) and comparatives (*better, bigger, further,...*).They form a closed set, even though the subsets include varying grammatical classes. The textual role of these items as Halliday and Hasan see it is to create cohesion. In this section, the occurrence of some members of this item class will be looked at in the writing of Finns in English as compared with similar writing by native speakers of English.

2.1. *Similarities across papers*

It was hypothesized above (Hypothesis 1) that the academic genre possesses some characteristics that hold across writing cultures and that would be reflected in references as used in such texts. These features include frequent use of endophoric, homophoric, esphoric and inferential references.

Since academic papers are produced and interpreted in circumstances where writers and readers rarely share the same non-verbal environment (i.e. the texts are very context-independent), endophoric references (those made within the text) can be expected to dominate over exophoric references (those pointing outside the text). This was generally found to be the case in both L1 and L2 texts. However, a commonly occurring reference that can be taken to be exophoric is to the paper itself:

(1)
The purpose of *this paper*...
The aim of *the present study*..
My goal *here*...

Academic papers are produced in highly restricted subcultural environments, and therefore another type of exophoric reference can be expected to be common, namely homophoric reference. Homophoric references are those which are made to referents identifiable on extralinguistic grounds, but independent of the specific situation (Halliday and Hasan, 1976: 71). In addition to things identifiable to anyone by virtue of being unique, such as *the sun*, referents can be identifiable by being otherwise known to members of the culture or subculture, such as *the vice-chancellor*. For instance:

(2)

the mother, the fetus (Text 3)
the bleeding tendency caused by aspirin (Text 9)
the newborn (Text 9)

The use homophoric references thus makes sense in a context where they are understood: it offers the writer a shortcut for making references assumed to present no problems of comprehension to the reader. It may also combine with nominalizations to strengthen the factual status of an assumption in the field, as in *the bleeding tendency caused by aspirin* above, which presents it as a fact known to all readers that aspirin tends to cause bleeding. Such references also offer gains in condensation of information into single sentence constituents, which can be flexibly manipulated in sentence structures. Furthermore, homophoric references may also play a role in signalling and marking group membership: only insiders understand it, and outsiders will be kept at bay by its frequent use.

For reasons similar to those offered for the use of homophoric references, it might be expected that research papers make frequent use of inferential references, that is, references which require the reader to infer the relationship between referents on the basis of shared knowledge or assumptions with the writer. Some inferences that the references require cannot be made successfully by a reader outside the field. Consider the following example:

(3)

(5) The biochemical disturbance of pre-eclampsia is thought to be the shift of the balance between antiaggregatory, vasodilatory prostacyclin (PGI2) and its endogenous antagonist, thromboxane A2 (TxA2) to the dominance of the latter. (6)This imbalance may result both from the decrease of PGI2-synthesis (...) and from the increase of TxA2-production (...) in the fetoplacental compartment. (7) *Further support* for this view comes from that low doses (60-160 mg/day) of acetylsalicylic acid (ASA) improve the pregnancy outcome in patients with previous history of IUGR, pregnancy-induced hypertension, systemic lupus erythematosus and placental insufficiency (...). (Text 3)

The relationship between ASA and the diseases mentioned is not accessible to the laity. The same applies to the relationship between ASA and the imbalance mentioned in (5) and (6). Thus the reference to *further support* in sentence (7) is not meaningful to a reader without prior knowledge about the biochemistry of ASA. The necessary piece of information for bridging the gap between the senses of (5) and (6) and that of (7) is in fact provided very much later in the text, at the beginning of the Discussion section:

(4)

> The biochemical basis of the treatment of pre-eclampsia and other pregnancy-associated hypertensive diseases with ASA (...) is that low doses of it are supposed to inhibit TxA2, but not PGI2-synthesis (...).

By placing the information so late, the writer seems to assume that it is already known to readers. In other words, he does not present it as new, but rather reminds the reader of some shared knowledge.

Since it is commonly held that academic discourse aims at explicitness, it was assumed that a good number of the demonstrative non-selective references (i.e. the definite articles) would be of the esphoric type, in other words the identity of the referent would be recoverable within the nominal group (cf. Ventola, 1987: 148). Several instances of this were found in all the papers. For example,

(5)

> ...***the capacity** of this vessel to synthesize PG12* is unimpaired by... (Text 9)
> ***The mechanism** of differential inhibition of maternal platelets by aspirin* is of considerable interest. (Text 9)
> ...***the safety** of this dose of aspirin as regards neonatal haemostasis* is probably only relative. (Text 9)
> ...***the physiochemical methods** that we used.* are highly sensitive... (Text 5)

Explicitness of reference in these texts is also manifested in the relatively infrequent usage of pronominal reference: full forms are usually preferred.This is interesting in the light of Halliday's (1985:291) view that the fundamental motivation for reference is that elements requiring the listener or reader to store and retrieve what has gone before have the effect of providing a source of coherence. Using the full form constantly would in his view not require the reader to retrieve the referent from elsewhere, therefore he /she would begin to wonder whether we are still talking about the same referent. Since academic papers contain so infrequent pronominal references, it might be concluded that they sacrifice cohesion for explicitness. However, since they probably have similar requirements to be cohesive as any other texts, they may use other means to compensate for the lack of pronouns. This question will be returned to below in the next section.

2.2. *Differences between native and non-native writers*

In addition to the similarities hypothesized and found in the use of references by both Finnish and English-speaking writers, Hypothesis 1 further predicts that there will be differences between English- and Finnish-speaking writers. This latter assumption must remain an undirectional hypothesis, since at this exploratory stage of research no obvious basis offers itself for making specific predictions about the possible differences. Difficulties in article usage can be predicted for Finns on the basis of language system differences, but the analysis at hand is not concerned with overt errors so much as finding differences. Therefore, an inductive approach was adopted: looking at the category of reference items, are there any obvious differences between the texts?

Even given the relatively small number of texts examined, differences between the two groups did seem to emerge. The most striking difference was found between the L1 and L2 writers' use and distribution of selective (*this, that, these, those*) vs. non-selective (*the*) demonstrative reference. The Finnish writers employed this reference type clearly less than English writers did.

It seems that the variable frequency of employing selective demonstrative references is not without rhetorical consequences. First, the relatively frequent use of *this* probably gives a sense of the writer tightly following the same argument, as well as making explicit to the reader which particular referential connection is being made. Thus it may compensate for the relative lack of anaphoric pronouns which was established above as a typical feature of academic papers. The constant use of *the* with full nominal groups probably does create uncertainty in the reader in the way Halliday was suggesting. The selective demonstrative references frequently occur with nouns, as in *this vessel, this dose of aspirin* and may thus provide a compromise between the explicitness of the full nominal group, and the identificational properties of anaphoric pronouns.

Another rhetorical effect that *this* produces is an impression of closeness or solidarity between reader and writer. It has the effect of bringing the reader round to the writer's orientation, or point of view, by implying that the writer as well as the reader are both "here", on the same side, looking at things from the same perspective.

These uses of *this* then appear to lend credibility to text, which was postulated as a major goal for academic rhetoric. If this is the case, Finns seem to be at a disadvantage, at least in the English-speaking world, if they do not utilize such devices to the full.

In sum, the use of reference items in the texts investigated seems to confirm the hypothesis that a number of genre-typical usages can be found in all writers' texts,

while culture-typical features also emerged. Finnish writers appeared to utilize the possibilities of selective demonstrative reference less than their English-speaking colleagues.

3. Referents as participants

In addition to the use of reference items discussed above, referents can be tracked through texts by identifying them every time they are mentioned. This approach makes no such strongly restrictive assumptions about the forms that the references should take as the reference item approach does. Instead, it has to assume some notional unity between referents counted as instances of the same, or more precisely, between the mental representations evoked by the references. References made to such recurrent, or central, referents in the text can be construed as tracking participants in the text. The concept of participant tracking is borrowed from Jim Martin's (1983) work. Martin's view of reference has a grammatical basis, in that it is seen as being realized in nominal groups within the sentence structure in a similar fashion that verbs realize processes. However, his concept of participants contains a strong notional aspect as well, as can be seen from the following definition of participant identification: "the strategies languages use to get people, places and things into a text and refer to them once they are there." (Martin, 1983:59)

This definition bears resemblance to reference chains (see e.g. Källgren, 1979), which, again, resemble Hasan's (1980, 1984) cohesive chains as well as Hoey's (forthcoming) system of lexical repetition, thus extending the construct towards lexical cohesion. Lexical cohesion is kept separate from reference by Halliday and Hasan (1976), although they admit that together these form a continuum of cohesive elements. They seem to want to maintain a clear distinction between grammar and lexis, which motivates keeping lexical and referential cohesion apart. The maintenance of such a distinction is not important for the concerns of this study, and therefore lexical reference was included in the analysis at this stage. A participant view of reference is, then, extended to notional participants, whose grammatical and lexical status may vary throughout the text.

A distinction is here made between central and peripheral referents: central referents are considered to be those that occupy an important position in the propositional representation of the text and usually appear frequently in the text, often spread throughout the entire article, with the most central, the 'key' referents commonly incorporated in the title. Peripheral referents are less importantly represented in the propositions of the text and they tend to occur less regularly. The referents were tracked by noting the key referents of the text and seeing how reference was made to

them. The key referents were taken to be those central referents that were denoted by the main lexical items in the title of the paper. It was assumed that the writers intended to include the main elements in the title, since the 'key words' indicated by some authors for computer filing overlapped almost completely with those appearing in the titles.

References were tracked by a simplified modification of Källgren's (1979) reference chain system, by counting instances of

1.**identity**, including coreferentiality and changes of word class, e.g. *aspirin - it, fetus - fetal*
2.**synonymy**, including instantial synonymy, e.g. *thromboxane production - thromboxane biosynthesis*
3.**contrast**, including antonymy, e.g. *risk - safety*

More complex referential ties that Källgren also explores were left out of this count, such as relations involving specification (part-whole relations), hyponymy and inferential references. Reference ties were taken to hold between any elements in complex nominal groups, not solely the heads of the groups. It was frequently the case in these texts that important semantic ties were formed between elements of a different status in nominal groups, for instance *cyclo-oxygenase - irreversible acetylataion of cyclo-oxygenase - platelet cyclo-ogygenase - the principal cyclo-oxygenase product of platelets.*

The chains were then used to test the assumption made in Hypothesis 2 above: Finns place more emphasis than English writers on the ends of text sections. Therefore Finnish writers are expected to introduce new and important referents later in a text section than native speakers of English.

It seems from earlier work on articles written by Finnish writers (Mauranen, 1990) that Finns often start their texts from rather far away from the main topic of discussion and develop towards it gradually. They thus create a distance between the beginning and the main topic of the text. They also tend to keep their main point until the end, which sometimes has the consequence that the main clue to the interpretation of a section only comes at the end of it. The typical (notional) paragraph in a Finn's text would then tend to have the important content elements towards the end, whereas English-speaking writers are probably more likely to place important elements early in the text. This English preference is frequently expressed in writers' guidebooks, and particularly American writing manuals advise writers to use a 'topic sentence' to start every paragraph. If these assumptions are correct, they ought to manifest themselves in different reference patterns, insofar as central referents reflect the development of content in texts. As an illustration of the patterns found in the L1 and L2 English texts, the introductory sections of two medical texts (Text 9 and Text 3) are compared

below. The key elements of the titles are followed through the introductions, and indicated with different lines.

(6) Text 9 (L1 ENG)

LOW DOSE ASPIRIN TREATMENT IN LATE PREGNANCY DIFFERENTIALLY INHIBITS CYCLO-OXYGENASE IN MATERNAL PLATELETS

INTRODUCTION

(1) Aspirin inhibits prostaglandin synthesis[1] by irreversible acetylation of cyclo-oxygenase[2]. (2) Thromboxane (TX)A_2, a potent but unstable pro- aggregatory vasoconstrictor, is the principal cyclo-oxygenase product of platelets[3]. (3) The bleeding tendency caused by aspirin[4], and its efficacy in the prophylaxis of thrombotic disease[5], are probably due to platelet cyclo-oxygenase. (4) Aspirin taken in late pregnancy, can cause haemorrhagic complications in the new-born[6]. (5) Conversely it may be of value in the prevention of pre-eclampsia[7,8]. (6) This beneficial effect may be due to a reduction of placental thrombosis and infarction as a result of inhibition of TXA_2 synthesis in maternal platelets. (7) Disordered haemostasis in the infant, on the other hand, presumably reflects inhibition of cyclo-oxygenase in fetal platelets. (8) A dose regimen of aspirin that selectively inhibits cyclo-oxygenase in maternal platelets therefore offers the prospect of improving the therapeutic ratio of desired to toxic effects, especially if synthesis of the anti-aggregatory vasodilator prostacyclin (PGI_2) by fetal vessels is unimpaired[9].

(9) A single dose of aspirin (100 mg) during labour inhibits thromboxane production in maternal and fetal blood allowed to clot ex vivo[10]. (10) This is a measure of platelet cyclo-oxygenase[11]. (11) Repeated lower doses of aspirin (0.45 mg kg^{-1} day^{-1}) cause a cumulative and selective inhibition of platelet thromboxane production in healthy non-pregnant women[12]. (12) We therefore studied the effect of repeated low doses of aspirin on thromboxane production by maternal and fetal blood clotted ex vivo, and on PGI_2 synthesis by rings of umbilical artery. (13) TXA_2 and PGI_2 were measured as their stable hydrolysis products TXB_2 and 6-oxo-PGF1.

(7) Text 3 (L2 ENG) (only typing errors corrected)

50 MG OF ACETYLSALICYLIC ACID DAILY INHIBITS MATERNAL THROMBOXANE BUT NOT MATERNAL PROSTACYCLIN OR FETAL PROSTANOIDS IN HIGH RISK PREGNANCIES

INTRODUCTION

(1) Pre-eclampsia is characterized by elevated blood pressure, vasoconstriction, m· thrombosis and proteinuria of the mother and intrauterine growth retardation (IUGR) of the fe... (2) When developing to eclampsia it may be fatal for both mother and fetus. (3) Pre-eclampsia occurs in 7% of primigravidaea and if been once, it reoccurs in 25% (Rubin and Horn 1988). (4) Thus it is one of the major risks of pregnancy, and its prevention is of great importance.

(5) The biochemical disturbance of pre-eclampsia is thought to be the shift of the balance between antiaggregatory, vasodilatory prostacyclin (PGI2) and its endogenous antagonist, thromboxane A2 (TxA2) to the dominance of the latter. (6) This imbalance may result both from the decrease of PGI2-synthesis (Bodzenta et al. 1980; Bussolino et al. 1980; Downing et al. 1980; Ylikorkala et al. 1981, 1986) and from the increase of TxA2-production (Koullapis et al. 1981; Mäkilä et al. 1984) in the fetoplacental compartment. (7) Further support for this view comes from that low doses (60-160 mg/day) of acetylsalicylic acid (ASA) improve the pregnancy outcome in patients with previous history of IUGR, pregnancy-induced hypertension, systemic lupus erythematosus and placental insufficiency (Beaufils et al. 1985; Wallenburg et al. 1985, 1987; Elder et al. 1988; Trudinger et al. 1988). (8) Little is, however, known on the effects of low doses of ASA during pregnancy on maternal in vivo PGI2 and TxA2 and on the fetal/neonatal prostanoid metabolism. (9) Therefore we evaluated the effect of daily treatment with 50mg of ASA from the 16th week of pregnancy to term on the maternal and fetal/neonatal productions of PGI2 and TxA2.

A clear difference can be seen in handling participants in these two texts: the L1 text introduces all the central participants (*aspirin, platelets,* and *cyclo-oxygenase*) in the first two sentences, and continues to refer to them throughout the two paragraphs. The L2 text, on the other hand, starts out by making frequent reference to a participant (*pre-eclampsia*) which is neither mentioned in the title nor central to the text as a whole. The central participants are only introduced in the second paragraph. The participant acting as a starter, as it were, reappears in the text only at the beginning of the Discussion section, again in a similar role.

(8)

> The biochemical basis of the treatment of *pre-eclampsia* and other pregnancy-associated hypertensive diseases with ASA (...) is that low doses of it are supposed to inhibit TxA2, but not PGI2-synthesis (...). Although large scale clinical trials on the prevention of *pre-eclampsia* with ASA are going on (...), this work is the first systematic study on the effect of low doses of ASA during pregnancy on the feto-maternal PG-metabolism.

The information on pre-eclampsia given in the first sentence above is not presented as new to the reader, as was pointed out earlier, since it is in fact presupposed in a successful interpretation of sentence (7) in the Introduction. It seems, rather, again to serve as a starter before the text focuses on the central referents. At the same time, it appears to have the rhetorical function of providing a basis for the argument developed in the text, by linking the research to the curing of a disease, which, presumably, is a desirable goal in the medical profession. A reference to the common goal of curing the disease is made once more in the text, again not providing the reader with new information, but reminding him/her of it as part of the argument. The third and last reference to pre-eclampsia occurs in the beginning of the third paragraph of Discussion:

(9)

> The inhibition of PGI2-production would be an undesired effect in attempt to prevent *pre-eclampsia* with ASA.

If a reader were to start reading text 3 in a linear fashion, it would be natural to assume for quite some time that the text is essentially about pre-eclampsia. After reading the whole text, most readers would probably agree that it is really about aspirin and prostanoids, like Text 5, the comparable native speaker text. This topic is, of course, also indicated by the title. However, it was typical of the Finnish texts studied to start entire texts and their individual sections with starter participants, which are peripheral to the text as a whole, before moving on to the central participants. Often superordinate terms or background variables would serve as such starter referents.

The tendency to focus in on the important topic of discussion is not unknown in English: a funnel strategy leading from general to more specific issues was found to be typical of thesis introductions by Dudley-Evans (1986). However, his study did not show whether the strategy was in fact realized through linguistic categories in any systematic fashion. In any case, the tendency seemed much more pronounced in the articles written by Finns, since the strategy was not limited to movement from general to particular, but included various other ways as well of approaching the main topics of the text from a distance created at the beginning. In addition, Finnish writers resorted to this strategy in other text sections besides the introduction, such as the beginnings of new sections.

4. Conclusions

This study found both similarities and differences in the patterns of reference use in the texts of Finnish-speaking and English-speaking writers. The observed similarities, such as the frequent use of endophoric, homophoric, esphoric and inferential references, appeared to accord with the functional requirements usually made on academic papers in general. The differences, again, are probably attributable to different cultural values of writing. The resulting differences in rhetorical effects thus probably reflect different rhetorical preferences of Finnish and English-speaking writers.

One set of differences between the Finnish and English writers was observed in the use of reference items in text: Finnish writers employed fewer selective demonstrative references through the item *this* than native speakers of English did. The resulting rhetorical effect appears less persuasive than one rendered by a more frequent use of *this*, insofar as the use of *this* invites solidarity from reader to writer, presenting them as being on the same side, as if looking at things from the same perspective.

These differences in the use of reference items are then likely to reduce the persuasiveness of Finnish papers in an English-speaking reader's eyes. Such subtle influences are not likely to be consciously noticed by readers, and therefore they may not be easily forgiven or overlooked as foreigners' errors.

Differences were also found in texts written by Finns and native speakers of English from the perspective of participant tracking. A typical difference in the rhetorical preferences of Finnish and native English writers appears to be that Finns tend to start texts and passages from a distance, only gradually approaching the key points of the text. This could be called an end-weight strategy. In the use of references, this is reflected in the relatively late introduction of the central referents in texts written by Finns in comparison to texts written by native speakers of English. The excessive use

of this rhetorical strategy may create an effect of vagueness or indirectness in a reader expecting to know sooner what the key elements are in the text.

It seems, then, on the basis of this study, that reference can fruitfully be used for studying text organization and rhetorical effects. Applied to these data, reference use revealed typical features of academic texts in general, some specific problems of foreign writers, as well as interesting cultural differences. Nevertheless, the results concerning features that were considered to be common across cultures need support from data from other cultural backgrounds. It would also be worth investigating whether the specific differences between Finnish and English writers would be supported by data from different genres and possibly also from the oral mode of language use.

The choice of subjects in this study also offers interesting possibilities for future comparison with the majority of writing research, which is carried out on subjects learning to write academic texts. How do mature non-native writers (such as those studied here) compare to apprentice writers who are native speakers of English? Another, particularly interesting aspect of academic rhetoric directly related to reference is the rhetoric of zero article: i.e. the question of generic vs. specific reference usage in academic papers. The overall pattern in a complete paper appears to develop from general references to specific, and back to general. This is a property of academic rhetoric that an apprentice writer must learn to master, whatever the native language.

For a more comprehensive insight into the strategies used by writers to create rhetorical effects appropriate to the purposes of academic papers, reference must be looked at in conjunction with other textual systems. It can be employed to provide evidence for hypotheses generated by analyses with other systems, such as thematic patterning, or text organization, and, conversely, it can be used to generate hypotheses that can be supported or rejected with evidence from other textual systems. It would also be of interest to see whether more data from different disciplines could uncover varying preferences or rhetorical strategies in different discipline areas.

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Anna Mauranen holds qualifications in English, Education and Applied Linguistics. She has published a monograph on language testing, articles in applied linguistics, and teaching materials for English as a foreign language. She is currently working as a researcher at the Language Centre for Finnish Universities at the University of Jyväskylä, investigating contrastive rhetorical aspects of academic writing.